

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the Application:

1-24 (Canceled)

25. (Currently Amended) A composite building material incorporating cellulose fibers, wherein at least a portion of the fibers are pretreated with an elevated temperature washing process to reduce COD content to less than 5 kg/ton, wherein the elevated temperature is between about 65 degrees Centigrade to about 120 degrees Centigrade, and wherein the cellulose fibers add strength reinforcement to the composite building material.

26. (Original) The composite building material of Claim 25, further comprising a cementitious matrix.

27. (Previously Presented) The composite building material of Claim 26, wherein the cementitious matrix incorporating the cellulose fibers is autoclaved.

28. (Original) The composite building material of Claim 25, wherein the reinforcing fibers are cellulose fibers made from cellulose pulps of lignocellulosic materials by a pulping process.

29. (Original) The composite building material of Claim 25, further comprising an aggregate.

30. (Original) The composite building material of Claim 29, wherein the aggregate is ground silica.

31. (Original) The composite building material of Claim 25, further comprising one or more density modifiers.

32. (Original) The composite building material of Claim 25, further comprising one or more additives.

33. (Currently Amended) A material formulation used to form a composite building material, comprising:

a cementitious binder;  
an aggregate;  
one or more density modifiers;  
one or more additives; and  
cellulose fibers, wherein at least a portion of the fibers are pretreated with an elevated temperature washing process to reduce COD content to less than 5 kg/ton of oven dried pulp, wherein the elevated temperature is between about 65 degrees Centigrade to about 120 degrees Centigrade.

34. (Original) The formulation of Claim 33, wherein the cementitious binder is selected from the group consisting of Portland cement, high alumina cement, lime, high phosphate cement, and ground granulated blast furnace slag cement, and mixtures thereof.

35. (Original) The formulation of Claim 33, wherein the aggregate is selected from the group consisting of ground silica, amorphous silica, micro silica, diatomaceous earth, coal combustion fly and bottom ashes, rice hull ash, blast furnace slag, granulated slag, steel slag, mineral oxides, mineral hydroxides, clays, magnesite or dolomite, metal oxides and hydroxides, and polymeric beads, and mixtures thereof.

36. (Original) The formulation of Claim 33, wherein the density modifier is selected from the group consisting of plastic materials, expanded polystyrene, glass and ceramic materials, calcium silicate hydrates, microspheres and volcano ashes including perlite, pumice, shirasu basalt, and zeolites in expanded forms, and mixtures thereof.

37. (Original) The formulation of Claim 33, further comprising additional fibers selected from the group consisting of natural inorganic fibers, synthetic polymer fibers, regular cellulose fibers and mixtures thereof.

38. (Original) The formulation of Claim 33, wherein the low COD fibers are fibrillated to the freeness of about 150 to 750 degrees of Canadian Standard Freeness.

39. (Original) The formulation of Claim 33, wherein the low COD fibers comprise about 2%-20% of the formulation by weight.

40. (Original) The formulation of Claim 33, comprising about 10%-80% cement by weight.

41. (Original) The formulation of Claim 33, comprising about 20%-80% silica by weight.

42. (Original) The formulation of Claim 33, comprising about 0%-50% lightweight density modifiers by weight.

43. (Original) The formulation of Claim 33, comprising about 0%-10% additives by weight.

44. (Previously Presented) The formulation of Claim 33, wherein the low COD fibers improve the modulus of rupture of the fiber cement composite material by more than about 10%, compared to a fiber cement composite material made with an equivalent formulation containing fibers with COD content greater than 5 kg/ton.

45. (Previously Presented) The formulation of Claim 33, wherein the low COD fibers improve the modulus of elasticity of the fiber cement composite material by more than about 10%, compared to a fiber cement composite material made with an equivalent formulation containing fibers with COD content greater than 5 kg/ton.

46. (Previously Presented) The formulation of Claim 33, wherein the low COD fibers improve the ultimate strain of the fiber cement composite material by more than about 10%, compared to a fiber cement composite material made with an equivalent formulation containing fibers with COD content greater than 5 kg/ton.

47. (Previously Presented) The formulation of Claim 33, wherein the low COD fibers reduce the amount of COD released to process water by more than about 10% in the manufacture of the fiber cement composite material, compared to a fiber cement composite material made with an equivalent formulation containing fibers with COD content greater than 5 kg/ton.

48. (Previously Presented) The formulation of Claim 33, wherein the low COD fibers improve the toughness physical and mechanical properties of the fiber cement composite material, compared to a fiber cement composite material made with an equivalent formulation containing a fiber with COD content greater than 5 kg/ton.

49-67. (Canceled)